

46. (Amended) A kit comprising an isolated [, extrachromosomal] polynucleotide of Claim 33.

47. (Amended) A kit comprising at least one pair of isolated [, extrachromosomal] polynucleotides as in Claim 32.

48. (Amended) A kit comprising at least one pair of isolated [, extrachromosomal] polynucleotides as in Claim 36.

### REMARKS

#### **I. THE AMENDMENTS OF THE CLAIMS**

Claims 29-48 are pending in the instant application. With this Preliminary Amendment, Claims 29-48 have been amended to delete the expression "extrachromosomal." No new matter is added by these amendments, and they are believed to place the claims in condition for allowance. For the convenience of the Examiner, a copy of the claims as pending after entry of this Preliminary Amendment is attached hereto as Exhibit A.

#### **II. THE REJECTIONS**

##### **A. The Rejection Under 35 U.S.C. § 112, First Paragraph, Should Be Withdrawn**

Claims 29-48 stand rejected under 35 U.S.C. § 112, first paragraph, for allegedly lacking adequate written description. Specifically, the Examiner objects to the recitation of "extrachromosomal." While not agreeing with the propriety of this rejection, in order to expedite allowance of the claims, Applicants have deleted the word "extrachromosomal" from each rejected claim, thereby obviating this rejection. Accordingly, Applicants respectfully request that the rejection of Claims 29-48 under 35 U.S.C. § 112, first paragraph, be withdrawn.

**B.     The Amended Claims Should Not Be Rejected Under 35 U.S.C. §§ 102(b)/103(a)**

In the Advisory Action mailed March 31, 2000 the Examiner declined to enter the instant amendments because they allegedly raised new issues for examination. The Examiner asserts that the amended claims are anticipated by, or in the alternative made obvious by, Boretto *et al.*, 1992, Human Genetics 89:33-36 ("Boretto") under 35 U.S.C. §§ 102(b)/103(a). Applicants respectfully traverse.

In the Advisory Action, the Examiner asserts that "[t]he probes of Boretto *et al.* are . . . contained within the instantly disclosed sequences and will contain at least one of the polymorphic sites." Applicants respectfully disagree. Boretto used probes derived from the HLA gene cluster region of Chromosome 6 (*see* Boretto at page 35, Figure 2 and Table 1). Each of these probes was derived from either a 145 kbp chromosomal fragment located 600 kbp from HLA-B (derived from YAC 6F6; *see* Boretto at page 34, column 1, first paragraph) or from a 300 kbp chromosomal fragment comprising the HLA-A locus (derived from YAC B30; *see id.*). The isolated polynucleotides and polymorphic sites of the claimed invention are derived from an approximately 235 kbp fragment of Chromosome 6 that includes the Hereditary Hemochromatosis gene (also known as the HH gene or the HFE gene) (*see* Specification at page 24, lines 33-36). The HH gene is located 4 Mbp (*i.e.*, 4,000 kbp, or 4,000,000 bp) telomeric of the HLA gene cluster (*see* U.S. Pat. No. 6,025,130, col. 11, lines 34-36). Thus, the probes of Boretto and the polynucleotides recited in amended Claims 29-48 are derived from regions of the chromosome that are separated by approximately 4 million base pairs. Consequently, none of the probes of Boretto includes any of the polymorphic sites disclosed in Table 1 and recited in amended Claims 29-48. Accordingly, Boretto neither anticipates nor renders obvious amended Claims 29-48.


**CONCLUSION**

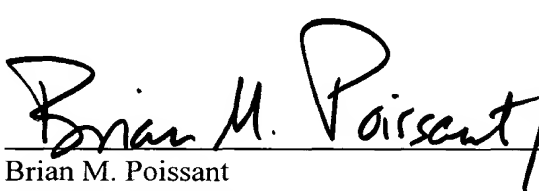
Applicants submit Claims 29-48, as amended, meet all of the criteria for patentability and are in condition for allowance. An early indication of the same is therefore respectfully requested.

No fee is believed due in connection with this Amendment. However, the Commissioner is authorized to charge any required fee or credit any overpayment to Pennie & Edmonds LLP Deposit Account No. 16-1150.

Respectfully submitted,

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**APPENDIX A**  
**Claims As Pending After Entry Of The Instant Amendment**

29. (Amended) An isolated polynucleotide comprising at least 8 consecutive bases and up to about 100 consecutive bases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

30. (Amended) The isolated polynucleotide of Claim 29, wherein the polymorphic site is at base 61465 of SEQ ID NO:1.

31. (Amended) The isolated polynucleotide of Claim 29, wherein the polymorphic site is at base 35983 of SEQ ID NO:1.

32. (Amended) A pair of isolated polynucleotides as in Claim 29.

33. (Amended) An isolated polynucleotide comprising at least 18 consecutive bases and up to about 100 consecutive bases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

34. (Amended) The isolated polynucleotide of Claim 33, wherein the polymorphic site is at base 61465 of SEQ ID NO:1.

35. (Amended) The isolated polynucleotide of Claim 33, wherein the polymorphic site is at base 35983 of SEQ ID NO:1.

36. (Amended) A pair of isolated polynucleotides as in Claim 33.

37. (Amended) An isolated polynucleotide comprising a fragment of at least about 100 consecutive bases and up to about 235 consecutive kilobases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

38. (Amended) The isolated polynucleotide of Claim 37 which is cDNA.

39. (Amended) The isolated polynucleotide of Claim 37 which is RNA.

40. (Amended) The isolated polynucleotide of Claim 37 which is genomic DNA.

41. (Amended) An isolated polynucleotide comprising a fragment of at least about 300 consecutive bases and up to about 235 consecutive kilobases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

42. (Amended) The isolated polynucleotide of Claim 41 which is cDNA.

- 43. (Amended) The isolated polynucleotide of Claim 41 which is RNA.
- 44. (Amended) The isolated polynucleotide of Claim 41 which is genomic DNA.
- 45. (Amended) A kit comprising an isolated polynucleotide of Claim 29.
- 46. (Amended) A kit comprising an isolated polynucleotide of Claim 33.
- 47. (Amended) A kit comprising at least one pair of isolated polynucleotides as in Claim 32.
- 48. (Amended) A kit comprising at least one pair of isolated polynucleotides as in Claim 36.